Catalogue of American Amphibians and Reptiles.

Lazcano-Barrero, M.A. 1992. *Bolitoglossa mulleri.*

Bolitoglossa mulleri (Brocchi) Müller's Salamander

Spelerpes mulleri Brocchi 1883:116. Type locality, several localities in "haute Vera Paz", restricted to "les montagnes qui dominent Coban", Alta Verapaz, Guatemala by Stuart (1943). Syntypes, Muséum National d'Histoire Naturelle Paris (MNHNP) 6395, 4 specimens collected by Bocourt in 1865 (Frost, 1985; Thireau, 1986) (not examined by author).
Spelerpes variegatus: Werner, 1903:352
Oedipus platydactylus: Dunn, 1926:400 (part).
Oedipus mulleri: Schmidt, 1936:150.
Bolitoglossa mulleri: Taylor, 1944:219.
Oedipus mexicanus mulleri: Stuart, 1948:19.
Bolitoglossa mulleri: Stuart, 1963:18.
Bolitoglossa moreleti mulleri: Duellman, 1963:220
Bolitoglossa mexicana mulleri: Wake and Brame, 1963:386.
Bolitoglossa muelleri: Villa, Wilson, and Johnson, 1988:4.

• **Content.** No subspecies are recognized.

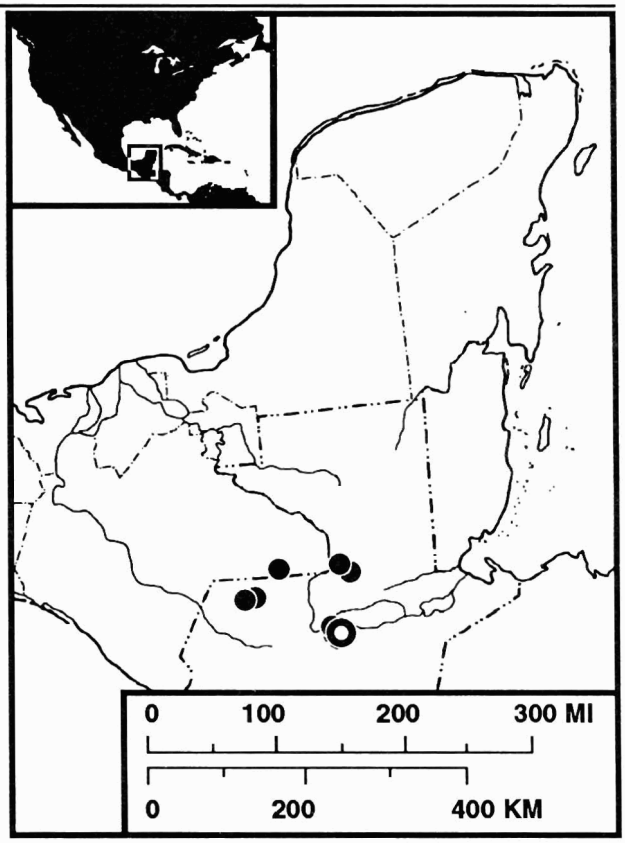
• **Definition.** *Bolitoglossa mulleri* is a medium to large salamander (females to 80 mm SVL, 162 mm TL) with 13 costal grooves (despite the claim of Duellman, 1963), 4-5 between adpressed limbs (Stuart, 1943). Limbs well developed and stout. Feet lack subdigital pads, but are fully webbed and have expanded terminal phalanges (Elias, 1984). The snout is broadly truncate, and vomerine teeth number 10-13 (Stuart, 1943). The tail is constricted basally and exhibits the primitive (alpha) mechanism for tail autotomy (Wake and Dresner, 1967).

• **Diagnosis.** *Bolitoglossa mulleri* is distinguished from other tropical bolitoglossines by its uniform dull brownish black to black ground color with a distinctive, narrow vertebral stripe of creamish yellow to orange (Werner, 1903; Schmidt, 1936; Duellman, 1963; Elias, 1984). Although missing or discontinuous in some individuals (Elias, 1984), the stripe usually extends from the tail tip to the neck, where it bifurcates to end on the eyelids (Lazcano-Barrero, 1992).

• **Descriptions.** The most complete morphological description of *B. mulleri* is given by Stuart (1943). Other descriptions are in Brocchi (1883), Werner (1903), and Duellman (1963); the latter also described a juvenile and an egg.

• **Illustrations.** Brocchi (1883) provided a color illustration, and Elias (1984) included a black and white drawing of an adult. Black and white photographs were presented in Stuart (1943), who compared the dorsal pattern with *B. platydactyla*, *B. mexicana*, and *B. odonnelli*, and in Lazcano-Barrero (1992).

Figure. *Bolitoglossa mulleri* from Boca del Chajul, Municipio de Ocosingo, Chiapas, México. Note the well-developed dorsal stripe. Photographed and released on site by R.A. Medellín.



Map. Distribution of *Bolitoglossa mulleri* in Guatemala and México. The large open circle represents the type-locality as restricted by Stuart (1943). Solid circles indicate other known localities.

• **Distribution.** *Bolitoglossa mulleri* has been recorded from five lowland localities along the Caribbean drainage of northwestern and central Guatemala in the departments of Alta Verapaz (Schmidt, 1936), El Petén (Duellman, 1963), and Huehuetenango (Elias 1984), and from one locality in the adjacent state of Chiapas, México (Lazcano-Barrero, 1992). *Bolitoglossa mulleri* inhabits both terrestrial and arboreal microhabitats in tropical and subtropical forests at elevations between 110 and 1500 m.

• **Fossil Record.** None.

• **Pertinent Literature.** General information on distribution, ecology, and systematics of *B. mulleri* was provided by Elias (1984), Stuart (1943, 1963), Wake and Lynch (1976), and Wake (1987). Stuart (1943) presented phylogenetic conclusions based on coloration. Stuart (1943) and Duellman (1963) discussed habits and habitat preferences. Duellman (1963) included the only information concerning reproduction and predators.

• **Remarks.** *Bolitoglossa mulleri* is a member of the *mexicana* species group in the alpha series of the genus (Wake and Lynch, 1976). Other members of this species group include *B. flaviventris*, *B. jacksoni*, *B. mexicana*, *B. platydactyla*, *B. salvinii*, and *B. odonnelli*. Much of the confusion regarding the taxonomic status of *B. mulleri* can be attributed to Brocchi's original description (1883) because his three figures (figs. 3, 4, and 5 of plate XX) corresponded to three different species. Figure 4 illustrated *B. mulleri*, whereas the other figures were of *B. odonnelli* and *B. dofleini* (Stuart, 1943).

• **Etymology.** The specific epithet is a patronym in honor of M. Müller, a German naturalist, who examined and recognized several specimens collected in Alta Verapaz, Guatemala as distinct from *Spelerpes salvini* (Brocchi, 1883).

• **Comments.** *Bolitoglossa mulleri* has been reported as a ground dweller living beneath rocks and logs in high moisture

situations, such as rainforests during the rainy season (Brocchi, 1883; Duellman, 1963) and well-watered gardens (Elias, 1984). The species has also been found in arboreal habitats (bromeliads) during dry seasons (Schmidt, 1936; Stuart, 1943; Lazcano-Barrero, 1992), suggesting that the species may switch from one microhabitat to another on a seasonal basis in response to water availability or humidity.

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